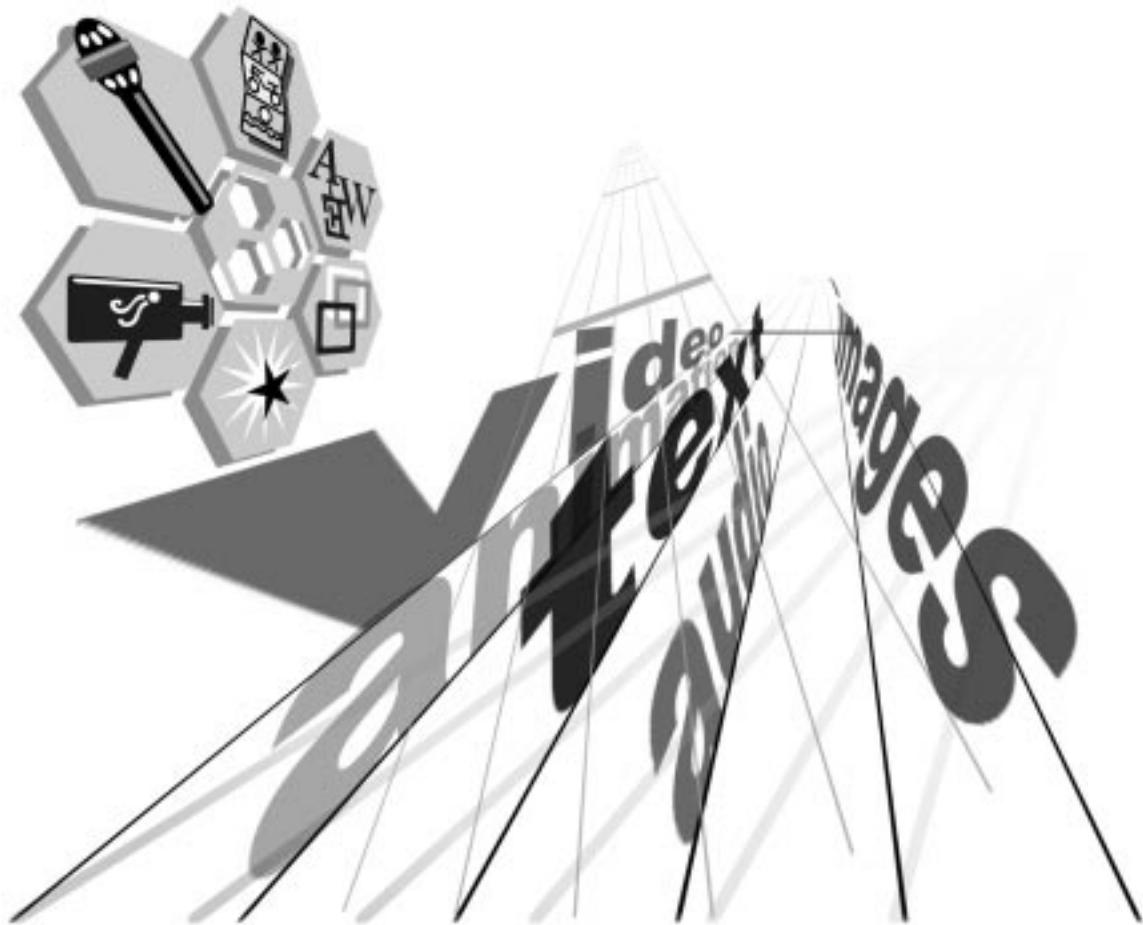




REALPRODUCER™ USER'S GUIDE

Version G2



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INTRODUCTION TO REALPRODUCER

Welcome to RealProducer G2 from RealNetworks. This tool converts standard audio and video into streaming media clips. Utilizing easy-to-use wizards, a simple interface, and customizable settings, RealProducer is perfect for either novice or advanced content creators.

Using RealProducer, anyone can easily create streaming media from a variety of sources. Convert standard audio or video files, record directly from media devices, or use RealProducer to broadcast and stream live content.

In addition to creating RealMedia with RealProducer, you can also use this tool to publish your RealMedia files over the Internet. These publishing features allow you to add the dimensions of sight and sound to your Web site or e-mail. Use RealProducer to instantly demonstrate a product, broadcast a speech, or show home videos.

New Features for G2

This version of RealProducer includes new features that allow you to:

- Create improved-quality RealAudio® G2 audio output and RealVideo® G2 with Intel® video output
- Use a more flexible and usable interface
- Convert compressed QuickTime® files
- Monitor statistics during a recording session

About This Manual

Chapter 1: Installing RealProducer explains installation procedures and provides information about system requirements for installing and using RealProducer.

Chapter 2: Using RealProducer explains how to create streaming media from existing files, media devices, and live broadcasts. It also describes how to choose a target audience, how to use SureStream, and how to monitor the recording process.

Chapter 3: Publishing to the Internet discusses how to generate streaming media-enabled Web pages, publish those Web pages to a server, and send RealMedia files via e-mail.

Chapter 4: Customizing Recording Options explains how to change RealProducer preferences.

Chapter 5: Recording Tips provides information for increasing performance, using RealProducer more efficiently, and creating high-quality audio and video.

Chapter 6: Command Line Utilities shows you how to use the RealProducer command line tools.

For More Information

For additional information about using streaming media effectively and how to create multimedia presentations with your clips, refer to the *RealSystem G2 Production Guide*, available for download from the RealNetworks Web site at:

- **<http://service.real.com/help/library/index.html>**

For technical support with RealSystem G2, please fill out the form at:

- **<http://service.real.com/contact/email.htm>**

The information you provide in this form will help technical support personnel to give you a prompt response. For general information about RealNetworks' technical support, visit:

- **<http://service.real.com/help/call.html>**



INSTALLING REALPRODUCER

Installing RealProducer is quick and easy. Before you begin, make sure your computer meets the necessary system requirements. See “System Requirements” on page 3 for more information.

How to Install

Follow this procedure to install the product onto your computer.

► To install RealProducer:

1. Download the installation program.
2. Close any other applications that may be open and double-click on the installation program icon.
The installer begins by preparing your system for RealProducer. When complete, the installer opens to the Software License page.
3. Read the terms and conditions carefully, and click **Accept** if you agree. You can click **Cancel** at any time to abort the installation.
4. Enter your e-mail address in the appropriate field.
5. Modify the directory RealProducer will install into by clicking the **Browse** button and selecting the new path.
6. Click **Finish**.

The install program installs all necessary programs and opens RealProducer.

System Requirements

This section outlines the basic hardware and software requirements needed to run RealProducer. Requirements are based upon whether you are recording from existing media files or from media devices.

RealProducer is currently available for the following operating systems:

- Microsoft Windows 95®
- Microsoft Windows 98®
- Microsoft Windows NT® 4.0 (Service Pack 3)

Requirements for Recording from Files

The following table lists the minimum and the recommended requirements for converting existing audio and video files into RealMedia files:

Recording from Files		
Requirement	Minimum	Recommended
CPU	Pentium® 120	Pentium® 166 with MMX
RAM	16 MB	32 MB
Hard Disk space (software)	8 MB	
Hard Disk space (data)	500 MB	1 GB
Color Display	16-bit	24-bit (TrueColor)
Sound Card	16-bit sound card or better	

Requirements for Recording from Media Devices

High-quality, live recording requires greater computer power than recording from media files. The following tables list the minimum and recommended requirements for recording either Single Rate or SureStream from media devices.

Media Devices - Single Rate

Requirement	Minimum	Recommended
CPU	Pentium® 166 MHz with MMX	Pentium® 200 MHz with MMX
RAM	32 MB	64 MB
Hard Disk Space	1 GB	1 GB
Color Display	16-bit	24-bit (TrueColor)

(Table Page 1 of 2)

Media Devices - Single Rate (continued)

Requirement	Minimum	Recommended
Video Capture Card	Any native Video for Windows® capable capture card	
Sound Card	16-bit sound card or better	16-bit sound card or better

(Table Page 2 of 2)

Media Devices - SureStream

Requirement	Minimum	Recommended
CPU	Pentium® 200 MHz with MMX	Pentium II® 400 MHz
RAM	32 MB	64 MB
Hard Disk Space	1 GB	1 GB
Color Display	16-bit	24-bit (TrueColor)
Video Capture Card	Any native Video for Windows® capable capture card	
Sound Card	16-bit sound card or better	16-bit sound card or better

In addition to normal hardware and software requirements, you must possess any of the following live capture and recording devices:

- VHS, S-VHS, or Beta-SP video player
- Digital Video Disk (DVD) player
- live video camera and microphones

USING REALPRODUCER

Chapter 2

This chapter describes how to use RealProducer to convert standard audio and video into streaming RealMedia. The entire conversion process is known as a “recording session.” Here, you will learn how to create a recording session from a variety of input sources, how to record with SureStream, and how to monitor your recording session.

What is Streaming Media?

RealMedia clips created by RealProducer are streaming audio and video presentations, also known separately as RealAudio and RealVideo. Prior to RealMedia, one had to wait for a media file to download in order to play it. When you create a streaming clip, users can play it almost instantly. Plus, you can stream live media, enabling you to send your content directly to your audience.

By streaming a clip, you are sending small packets of information over a connection. On the other end, the user receives the information and plays your media clip bit by bit. The process is almost invisible to the user, except for a small amount of initial buffering.

RealProducer G2 is an integral part of the RealNetworks RealSystem G2. RealProducer creates the clips, RealServer™ sends the clips, and RealPlayer™ shows the clips. You can also use an Internet server to stream files, but you need to use a RealServer to stream live content.

The RealProducer Main Window

Before you begin to create RealMedia content, let’s briefly tour the different components of the RealProducer main window. This window is where you create, start, view, and stop a recording session.

The RealProducer Main Window



The upper section of the window is where you monitor the recording process. "Viewers" show you the input video and the recorded output during a recording session. Meanwhile, an audio level indicator gives you a visual representation of the audio track.

The middle section lists all necessary information about the final RealMedia file. Details such as clip information, the target audience, and the type of stream being recorded are found here.

On the bottom are the recording controls. These controls allow you start, stop, and play the current recording session. Also located here are the publishing controls. They are explained in "Publishing to the Internet" on page 37.

Creating Streaming Media

RealProducer includes a number of simple wizards to guide you step-by-step through the recording process. These recording wizards are specifically designed to:

- convert existing audio and video files into RealMedia files
- record RealMedia files from media capture devices
- broadcast live, streaming content using a RealServer

If you are more familiar with the recording process, you can bypass the wizards and set up the recording process manually. This option is discussed later in this chapter.

Recording from Media Files

This section describes how to record a RealMedia file from different types of existing media files using the recording wizard.

Only the following audio and video formats can be converted into RealMedia clips using the RealProducer:

- Audio (.au)
- Waveform audio (.wav)
- Video for Windows (.avi)
- QuickTime for Windows (.mov); requires DirectX 6.0

► To create a RealMedia file from an existing file using the recording wizard:

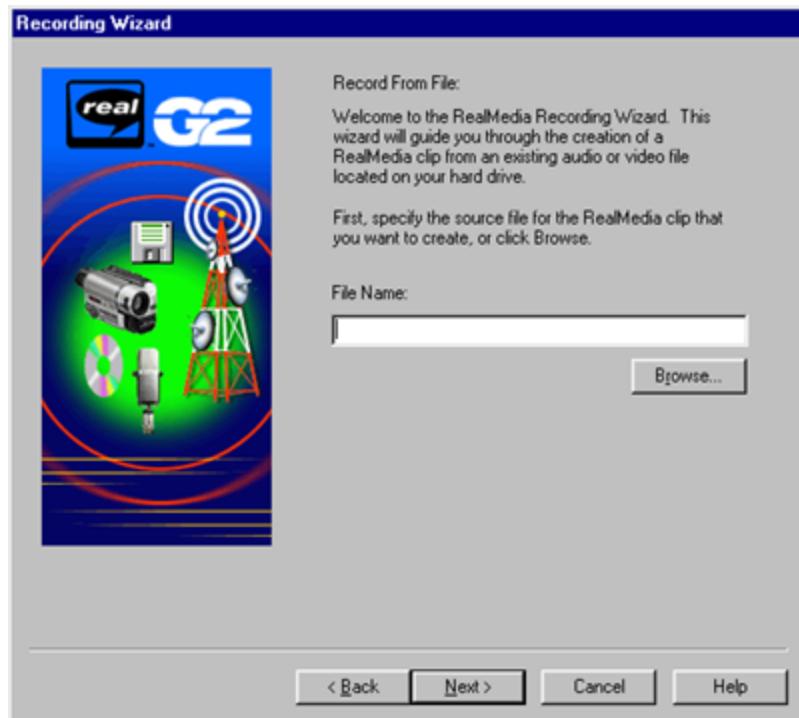
1. Select **New Session** from the **File** menu. (If the wizards are disabled you can select **File>Recording Wizards>Record From File** and go to step 3.)

The New Session - Choose Recording Wizard dialog opens.



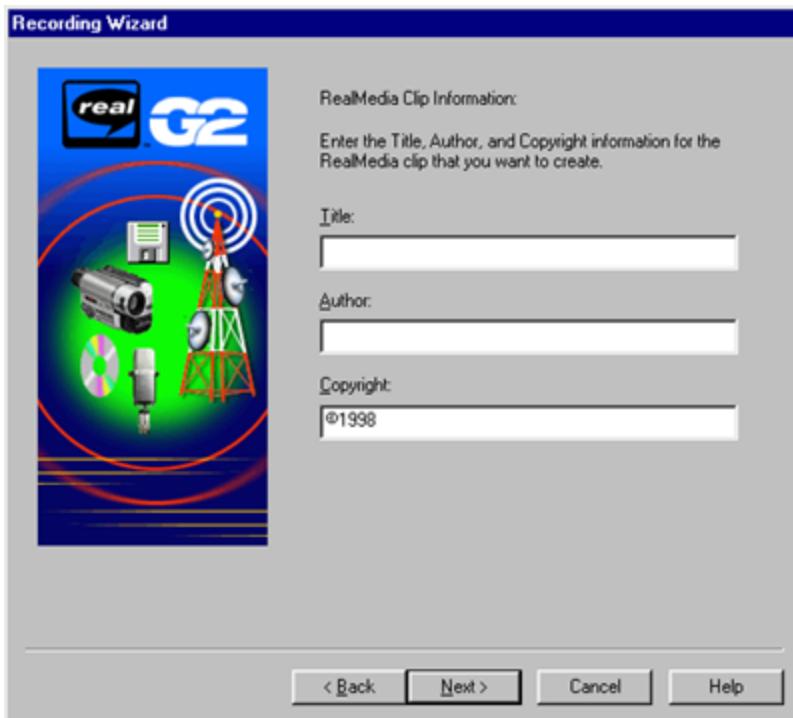
2. Select **Record from File** and click OK.

The recording wizard opens to the Record From File introduction page.



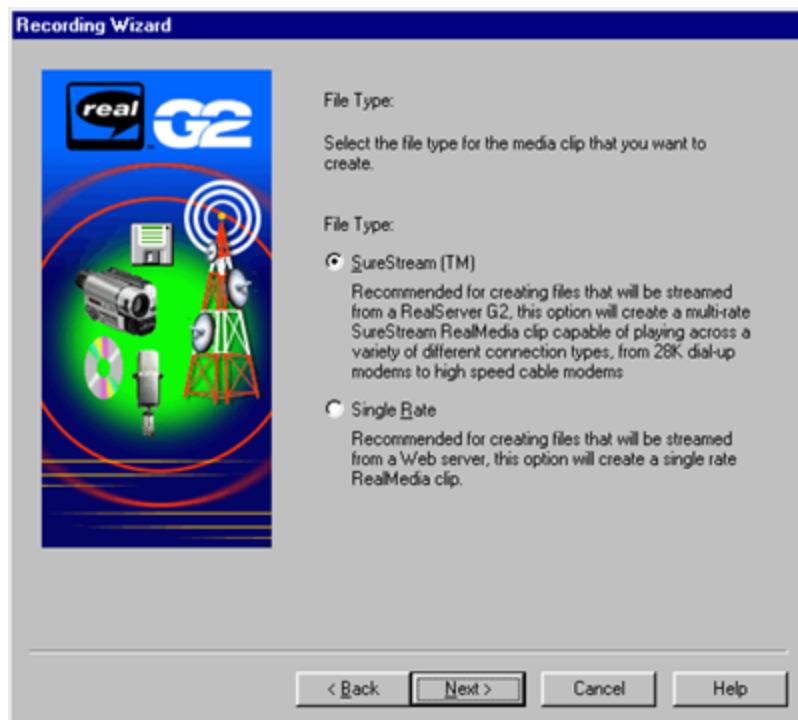
3. Use the **Browse** button to locate the audio or video file that you will use as the source for your recording. Or, simply type in the path and file name for the source file.
4. Click **Next**.

The RealMedia Clip Information page opens.



5. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.
This information will appear in the viewer's RealPlayer when your clip is played. You may leave these fields blank.
6. Click **Next**.

The File Type page opens.



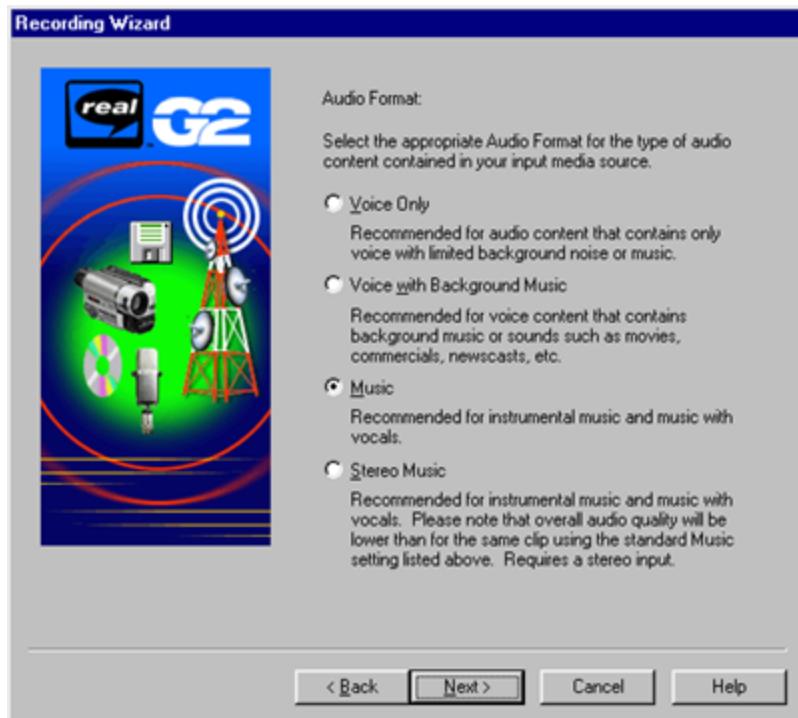
7. Select the type of RealMedia file you want to create: **SureStream** or **Single Rate**. For more information on SureStream files, see “About SureStream” on page 31.
8. Click **Next**.

The Target Audience page opens.



9. Select the connection speed for your audience. You may make more than one selection (up to two) if you are creating a SureStream file.
10. Click **Next**.

The Audio Format page opens if your source file contains audio. If not, skip the next step.

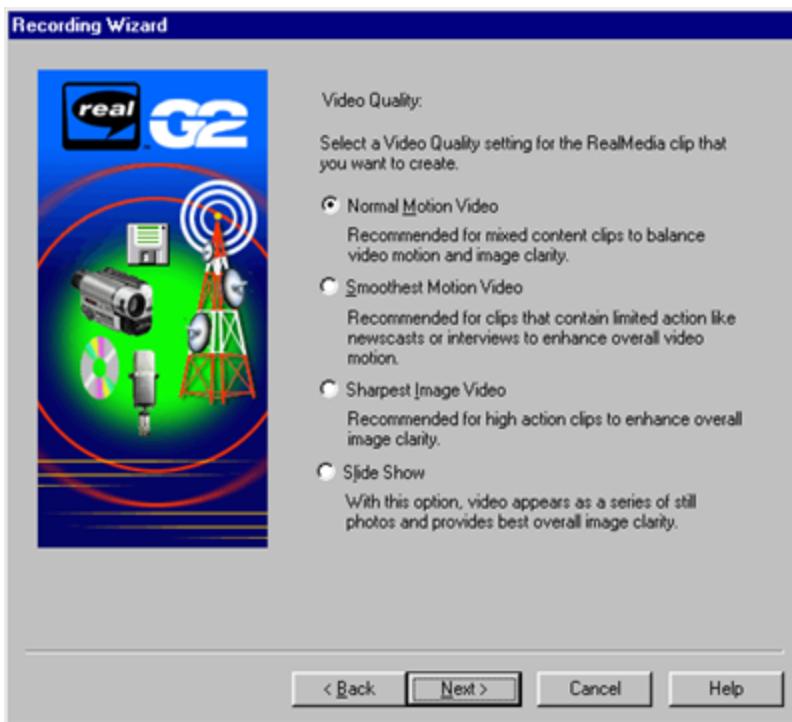


11. Select the type of audio that your file consists of (if applicable), and click **Next**.

Note

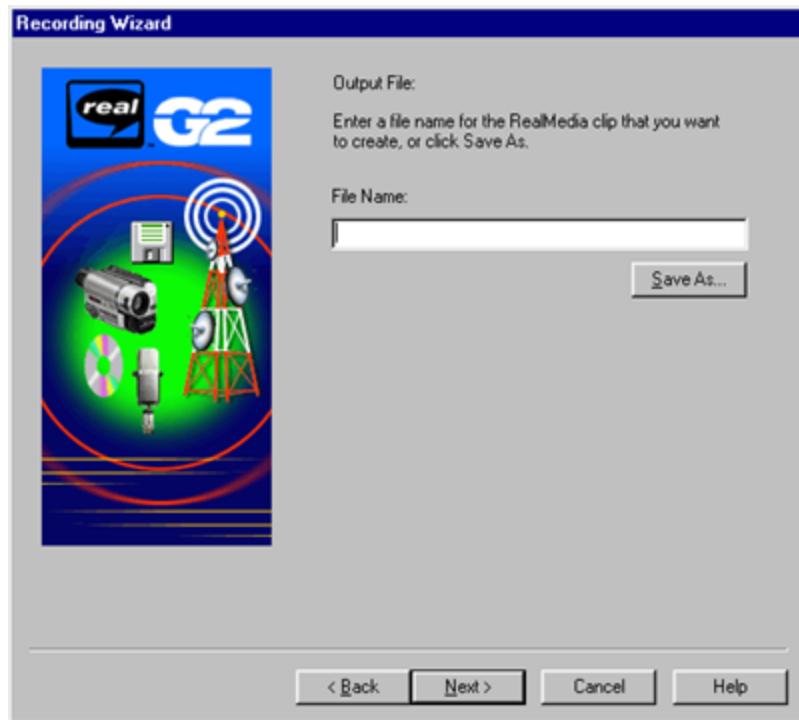
You can only select the Stereo Music format if your input audio is in stereo.

The Video Quality page opens if your source file contains video. If not, skip the next step.



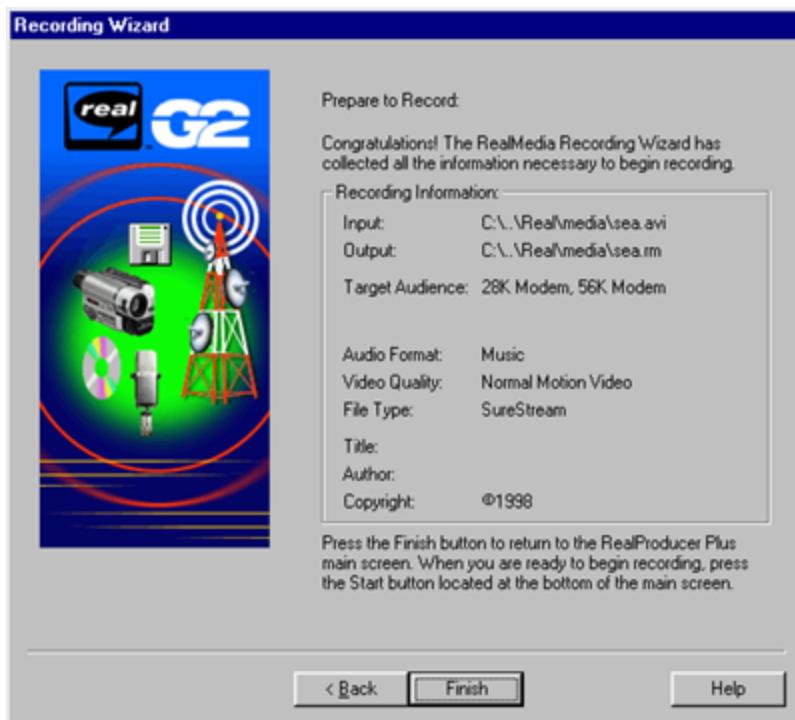
12. Select the video quality for your output file (if applicable), and click **Next**.

The Output File page opens.



13. Enter the name and directory of your final output file.
The output file must have a .rm extension (for example, myfile.rm).
14. Click **Next**.

The Prepare to Record Page opens.



15. Review all information regarding your file. If it is correct, click **Finish**. You can use the **Back** button to reverse through the wizard and change any information.
After clicking **Finish**, you are returned to the RealProducer main window. If you are recording video input, the Input Source viewer shows the first frame.
16. You can change any recording options at this point, or simply click **Start** to begin recording.
17. Click **Stop** to quit recording before the source file ends.

A dialog box opens asking you to confirm ending the recording, but the session continues to record.



18. Click **Yes** to close the dialog box and stop the recording.

Tip

You can press the **Shift** key and click **Stop** together to stop recording instantly and bypass the confirmation dialog box. Press **Ctrl+Shift** and click **Stop** to quickly abort the recording with no output file saved.

The Recording Complete dialog box opens. This dialog shows you final recording information about your RealMedia file.



19. Click **Statistics** to view complete information about your recording session. See "Monitoring Recording Statistics" on page 31 for more information.
20. Click **OK** to return to the main window.
21. Click the **Play** button to open your RealPlayer and play the RealMedia file.

Recording from Media Devices

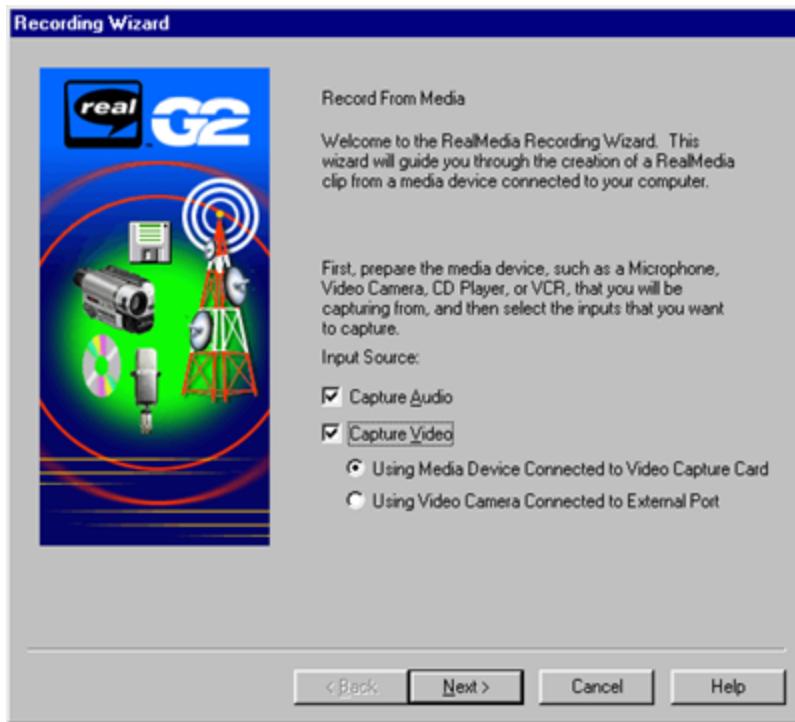
This section describes how to record a RealMedia file from different types of media devices using the recording wizard.

With RealProducer, you can record from many types of media devices: live microphone input, live video camera input, audio tape, video tape, Digital Video Disks (DVD), or satellite feeds.

Before you begin the recording session, make sure that your media device is properly connected and is working correctly.

► To create a RealMedia file from a media device using the recording wizard:

1. Select **New Session** from the **File** menu. (If the wizards are disabled you can select **File>Recording Wizards>Record From Media Device** and go to step 3.)
The New Session - Choose Recording Wizard dialog opens.
2. Select **Record from Media Device** and click **OK**.
The recording wizard opens to the Record From Media page.



3. Select the Input Source(s): audio or video.
4. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.
5. Click **Next**.

The RealMedia Clip Information page opens.

6. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.

This information will appear in the viewer's RealPlayer when your clip is played. You may leave these fields blank.

7. Click **Next**.

The File Type page opens.

8. Select the type of RealMedia file you want to create: **SureStream** or **Single Rate**. For more information on SureStream files, see "About SureStream" on page 31.

9. Click **Next**.

The Target Audience page opens.

10. Select the connection speed for your audience. You may make more than one selection (up to two) if you are creating a SureStream file.

11. Click **Next**.

The Audio Format page opens if you selected an audio device. If not, skip the next step.

Note

You can only select the Stereo Music format if your input audio is in stereo.

12. Select the type of audio that your content consists of (if applicable).

13. Click **Next**.

The Video Quality page opens if you selected a video device. If not, skip the next step.

14. Select the video quality for your output file (if applicable), and click **Next**.

The Output File page opens.

15. Enter the name and directory of your final output file.

The output file must have a .rm extension (for example, myfile.rm).

16. Click **Next**.

The Prepare to Record Page opens.

17. Review all information regarding your file. If it is correct, click **Finish**.

After clicking **Finish**, you are returned to the RealProducer main window. If you are recording video input, the Input Source viewer shows the video source.

18. You can change any recording options at this point, or simply click **Start** to begin recording.
19. Monitor your audio and/or video input, and click **Stop** to quit recording. A dialog box opens asking you to confirm ending the recording, but the session continues to record.
20. Click **Yes** to close the dialog box and stop the recording.

Tip

You can press the **Shift** key and click **Stop** together to stop recording instantly and bypass the confirmation dialog box. Press **Ctrl+Shift** and click **Stop** to quickly abort the recording with no output file saved.

The Recording Complete dialog box opens. This dialog shows you some information about your RealMedia file.

21. Click **Statistics** to view complete information about your recording session. See “Monitoring Recording Statistics” on page 31 for more information.
22. Click **OK** to return to the main window.
23. Click the **Play** button to open your RealPlayer and play the RealMedia file.

Broadcasting Live Content

This section describes how to broadcast live from different types of media devices using the recording wizard.

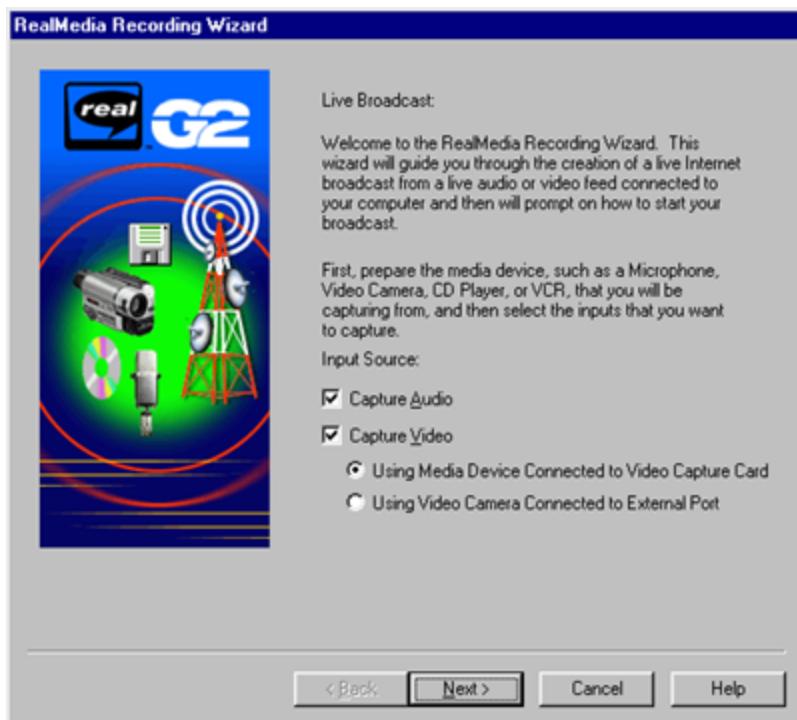
In addition to creating RealMedia files from your media sources, you can use RealProducer to broadcast your live content directly over the Internet or a corporate LAN. You must have access to a RealServer in order to use this feature.

➤ To broadcast live content using the recording wizard:

1. Select **New Session** from the **File** menu. (If the wizards are disabled you can select **File>Recording Wizards>Live Broadcast** and go to step 3.)
The New Session - Choose Recording Wizard dialog opens.

2. Select **Live Broadcast** and click **OK**.

The recording wizard opens to the Live Broadcast page.



3. Select the Input Source(s): audio or video.

4. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.

5. Click **Next**.

The Media Clip Information page opens.

6. Enter the **Title**, **Author**, and **Copyright** information in the provided spaces.

This information will appear in the viewer's RealPlayer when your clip is played. You may leave these fields blank.

7. Click **Next**.

The File Type page opens.

8. Select the type of RealMedia you want to create: **SureStream** or **Single Rate**. For more information on SureStream files, see “About SureStream” on page 31.

9. Click **Next**.

The Target Audience page opens.

10. Select the connection speed for your audience. You may make more than one selection (up to two) if you are using SureStream.

11. Click **Next**.

The Audio Format page opens if you selected an audio device. If not, skip the next step.

Note

You can only select the Stereo Music format if your input audio is in stereo.

12. Select the type of audio that your content consists of (if applicable).

13. Click **Next**.

The Video Quality page opens if you selected a video device. If not, skip the next step.

14. Select the video quality for your output file (if applicable), and click **Next**.

The RealServer Information page opens.



15. Enter the name, port, username, and password of the RealServer G2 that you will use for your broadcast. Plus, you must enter a filename that users will use to access the broadcast.

You may also specify a filename and location for an archive of your broadcast. Select **Archive Broadcast to File** and enter a file name, or click the **Save As** button to browse for the archive file. The file must have a .rm extension (myfile.rm).

16. Click **Next**.

The Prepare to Record Page opens.

17. Review all information regarding the broadcast. If it is correct, click **Finish**.

After clicking **Finish**, you are returned to the RealProducer main window. If you are recording video input, the Input Source viewer shows the video source.

18. You can change any recording options at this point, or simply click **Start** to begin broadcasting.
19. Monitor your audio and/or video input, and click **Stop** to finish the broadcast.
A dialog box opens asking you to confirm ending the broadcast, but the session continues to record.
20. Click **Yes** to close the dialog box and stop the recording.

Tip

You can press the **Shift** key and click **Stop** together to stop recording instantly and bypass the confirmation dialog box. Press **Ctrl+Shift** and click **Stop** to quickly abort the recording.

The Recording Complete dialog opens. This dialog recaps all information regarding your broadcast.

21. Click **Statistics** to view complete information about your recording session. See “Monitoring Recording Statistics” on page 31 for more information.
22. Click **OK** to return to the main window.

Recording Without Wizards

Although using RealProducer's recording wizards allow you to easily create RealMedia content, after time you'll likely be able to do without them. RealProducer allows you to disable the RealMedia recording wizards and create a new recording session without using a wizard.

Disabling the Wizards

This section describe how to disable the wizards and shows you how to use the New Session dialog to create RealMedia files. You can also toggle the wizards on or off with the Preferences dialog. For more information, see “Recording Wizards” on page 49.

➤ To disable the recording wizards:

1. Choose **New Session** from the **File** menu.

The New Session - Choose Recording Wizard dialog opens.

2. Select the **Don't use Recording Wizards** option.

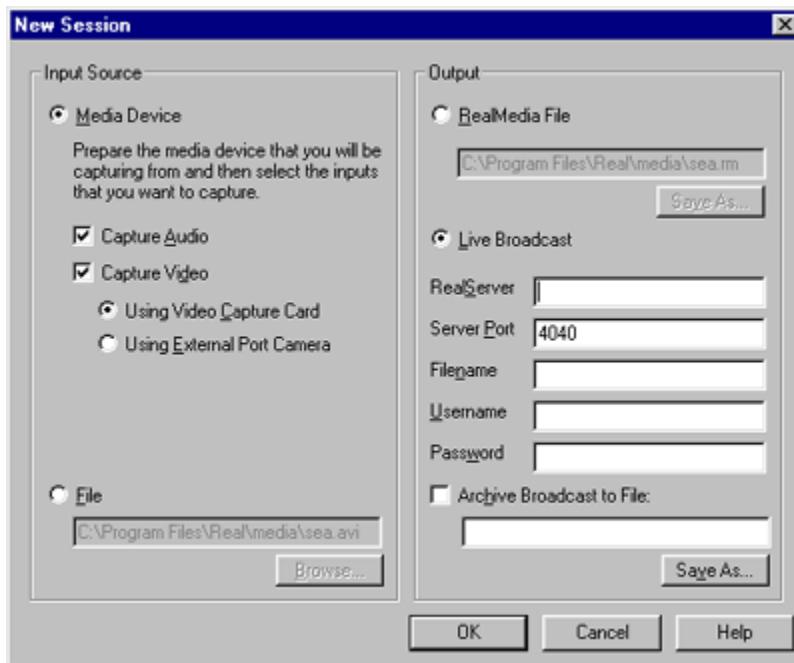
3. Click **OK**.

The New Session dialog opens. You can still run the recording wizards at any time by choosing **File>Recording Wizards** from the RealProducer main window.

Using the New Session Dialog

The New Session dialog allows you to create a new recording session without using the recording wizards. You can still create the same types of RealMedia content:

- from a media file to a RealMedia file
- from a media device to a RealMedia file
- a live RealMedia broadcast



There are two main sections of this dialog: the Input Source area and the Output area. You specify the type of source you will record in the Input Source area. You specify the type of RealMedia recording (file or live broadcast) in the Output area.

The following procedure shows you how to use the New Session dialog and create RealMedia content.

- To create RealMedia using the New Session dialog:

1. Click **New Session** from the **File** menu.

The New Session dialog opens:

2. In the Input Source section, select the source for your recording session.

Media Device - select the media devices that you will record from: audio and/or video. If you select a video source, specify whether you are using a video capture card or a video camera connected directly to your computer's external port.

File - enter the directory and filename for the source file, or click the **Browse** button to locate the file.

3. In the Output section, select what type of recording you are creating.

RealMedia File - enter the directory and filename for the recorded file, or click the **Save As** button to choose a directory and filename.

Live Broadcast - enter the name, port, username, and password of the RealServer that you will use for your broadcast. Plus, you must enter a filename that users will use to access the broadcast.

You may also specify a filename and location for an archive of your broadcast. Select **Archive Broadcast to File**, then enter a filename.

4. Click **OK**.

The New Session dialog closes, returning to the RealProducer main window.

5. Enter the **Title**, **Author**, and **Copyright** information for your output.

These fields are optional.

6. Select the **File Type**, either **Single Rate** or **SureStream**. For more information, see "About SureStream" on page 31.

7. In the **Target Audience** section, select the connection speed for your audience. You may select more than one target audience (up to two) if you are recording with SureStream.

8. In the **Audio Format** section, select the type of audio contained in your source (if any).

Note

You can only select the Stereo Music format if your input audio is in stereo.

9. In the **Video Quality** section, select the type of video contained in your source (if any).
10. Click **Start** to begin the recording process.
11. Click **Stop** to end the recording.

Tip

You can press the **Shift** key and click **Stop** together to stop recording instantly and bypass the confirmation dialog box. Or, press **Ctrl+Shift** and click **Stop** to quickly abort the recording.

About Target Audiences

Whenever you create a RealMedia file or broadcast RealMedia content, you should always keep in mind the connection speed of your audience. Are they using lower-speed modems, or are they streaming your file over a high-speed network?

When you select a specific target audience, you are actually specifying a maximum bandwidth for your RealMedia stream at the selected target audience. Bandwidth, measured in kilobits per second (Kbps), is the amount of data that can be sent through an Internet or network connection during a set period of time. Standard modems are commonly referred to by the bandwidth they are able to receive--for example, 28.8 and 56 Kbps.

In addition to these standard audiences, you can record clips for connection speeds of 100 Kbps, 200 Kbps, or higher. These higher bandwidths, however, are generally more typical of corporate Local Area Networks (LANs) or entertainment-based Web sites.

Keep in mind that the maximum bandwidth a connection is capable of is greater than the average bandwidth carried across it. For that reason, 28 Kbps connections actually only use approximately 20 Kbps, while a 56 Kbps connection actually uses about 34 Kbps.

Normally, these constraints can affect your recording in many ways. Sometimes you have to compromise between reaching the largest audience

(with the lowest-speed connections) and the quality of your work. Fortunately, RealProducer enables you to record for a number of target audiences simultaneously using SureStream.

About SureStream

With SureStream recording you can reach the widest possible audience, and provide all users with the best listening and viewing experience optimized for their bandwidth.

There are several advantages to using SureStream. You can create:

- a single RealMedia clip recorded for multiple target audiences (up to two)
- a clip that will automatically switch to a lower bandwidth during poor network conditions

SureStream RealMedia files can combine several different streams that take advantage of any or all of these features.

For example, you can record a video clip for both 28 Kbps and 56 Kbps audiences, and RealPlayer G2 will automatically use the correct stream based on the user's connection speed.

Keep in mind that if you are broadcasting SureStream files, you must use a RealNetworks RealServer G2.

Monitoring Recording Statistics

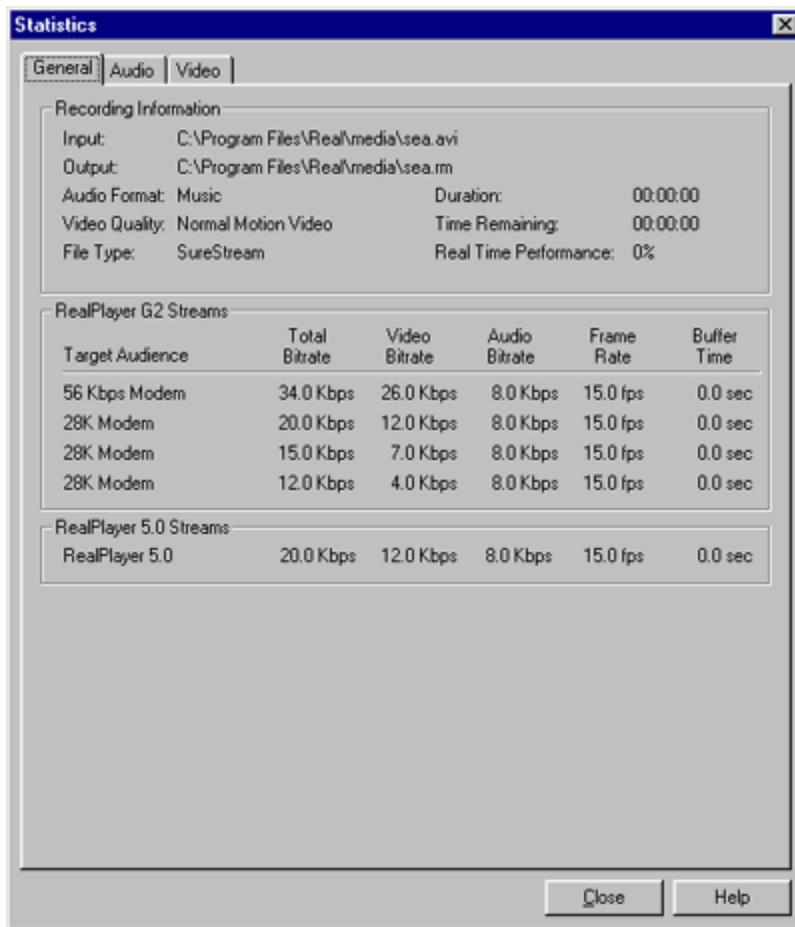
The Statistics window is a useful tool that allows you to monitor the performance of your recording session.

You can watch general statistics, audio-only statistics, or video-only statistics. Plus, if you are using SureStream, statistics are shown for each stream that RealProducer creates.

► To monitor recording statistics:

1. After you have created a recording session, choose **Statistics** from the **View** menu.

The Statistics window opens. You can return to the RealProducer window without closing the Statistics window.



2. Start recording, noting the top section of the Statistics window. Here is where you will find basic information about your recording session such as:

- type of input (file or media device)
- where the output file or broadcast is located
- audio format and video quality
- type of the file (SureStream or Single Rate)

You also find information that constantly changes, such as:

- duration of the clip for live broadcasts

- time remaining in the clip for static recording
- real time performance

3. Also monitor the general, audio, and video information located at the bottom of the Statistics window. These statistics are described later in this section.

Monitoring Real Time Performance

A main feature of the statistics dialog is its ability to show the performance of your recording session.

This statistic compares the time it took to record your clip to the time it takes to play the input. For example, if your input is a 10 second video clip and it takes RealProducer 5 seconds to process the clip, the Real Time Performance would be 50%.

Any value near or above 100% means that your computer may not be able to process data as fast as it is received, and the session may fail due to lack of computing resources. During live encoding, over 100% will fail. The error message you receive reads “not enough resources to maintain live stream.”

General Statistics

These statistics give you information about each target audience selected during the creation of the recording session. If you are recording a Single Rate clip, only one stream appears. If you are using SureStream, all streams are listed for each target audience.

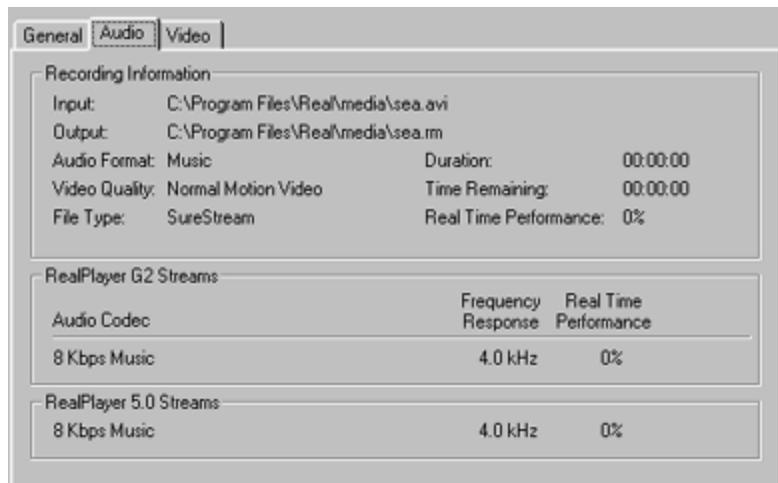
See the table below for more details about these statistics.

Using General Statistics

Statistic	Description
Target Audience	target bit rate of your audience
Total Bit Rate	total bit rate of the clip
Video Bit Rate	bit rate of the video stream
Audio Bit Rate	bit rate of the audio stream
Frame Rate	frames per second of video
Buffer Time	number of seconds needed before the clip can be played

Audio Statistics

These statistics give you information about the audio codecs (compression/decompression algorithms) used to create the audio streams. More than one codec appears if you are using SureStream.



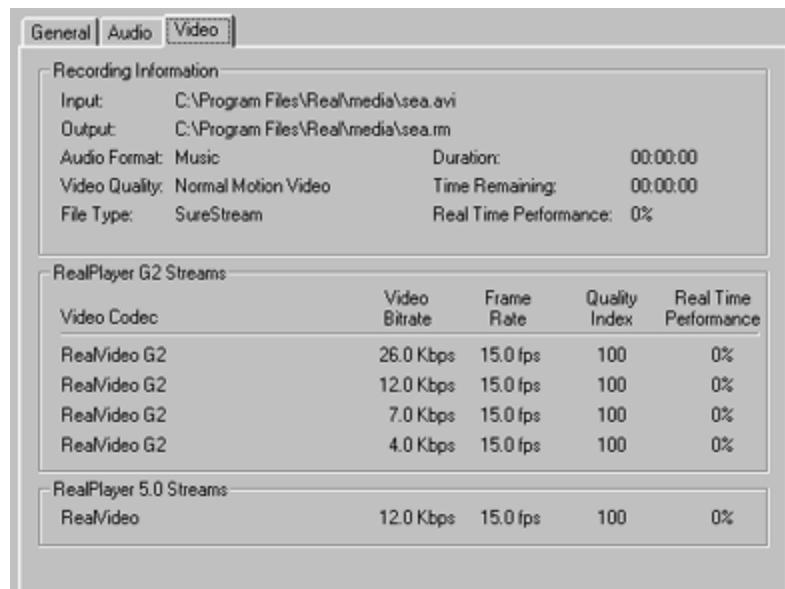
See the table below for more details about these statistics.

Using Audio Statistics

Statistic	Description
Audio Codec	codec being used to convert audio stream
Frequency Response	highest frequency found in the recorded audio
Real Time Performance	approximate percentage of your computer's audio recording speed compared to real time audio playing speed

Video Statistics

These statistics give you information about the video codecs (compression/decompression algorithms) used to create the video streams. More than one codec appears if you are using SureStream.



See the table below for more details about these statistics.

Using Video Statistics

Statistic	Description
Video Codec	codec used to convert video
Video Bit Rate	bit rate of the video
Frame Rate	frames per second of video
Quality Index	video quality affected by your computer processor's recording speed; 100 is best, and values less than 80 reflect reduced quality
Real Time Performance	approximate percentage of your computer's video recording speed compared to real time video playing speed



Along with its powerful recording features, RealProducer includes wizards that allow you to publish your streaming content to the Internet. Using these wizards, you can:

- create a RealMedia-enhanced Web page
- upload that Web page to a server
- send RealMedia files to others through e-mail

Creating Web Pages

A primary publishing feature of RealProducer is the Web Page Wizard. With this wizard, you can instantly create a Web page enhanced with RealMedia. The wizard creates all of the HTML necessary to provide a page that contains your streaming media file.

Guided through a series of prompts, you choose how to stream your RealMedia file: either with a RealPlayer in a separate window, or with a RealPlayer embedded within the page. The wizard then allows you to preview the finished page with your Web browser and a RealPlayer.

Follow these steps to create either type of RealMedia Web page, pop-up or embedded.

► To create a Web page that opens a separate RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.

The Web Page Wizard opens to the Introduction page.

2. Click **Next** to begin the Wizard.

The Media File page opens.

3. Select a RealMedia file.

The name of the last RealMedia file created by RealProducer appears by default. Click the **Browse** button to locate another file.

4. Click **Next**.

The Playback Method page appears.

5. Choose **Pop-up Player** and click **Next**.

The Web Page Caption page opens.

6. Enter text that will appear in the Web page that, when selected by a user, will open the RealPlayer and play your file.

7. Click **Next**.

The Web Page Filename page opens.

8. Enter the name and directory of the Web page you want to create.

Note

Avoid saving files into your computer's temporary directory (such as C:\TEMP), since this directory is reserved and may be deleted.

9. Click **Next**.

The Web Page Results page opens. This page informs you that a Web page and a RealMedia metafile have been created.

10. If you wish to preview your Web page with an Internet browser, click **Preview** on the Results page.

You must have RealPlayer installed to view your page properly.

11. Click **Finish** to close the wizard.

► To create a Web page with an embedded RealPlayer:

1. Select **Create Web Page** from the **Tools** menu.

The Web Page Wizard opens to the Introduction page.

2. Click **Next** to begin the Wizard.

The Media File page opens.

3. Select a RealMedia file.

The name of the last RealMedia file created by RealProducer appears by default. Click the **Browse** button to locate another file.

4. Click **Next**.

The Playback Method page appears.

5. Choose **Embedded Player** and click **Next**.

The Player Control Layout page appears. In this page, you can decide what components of the RealPlayer to include within the Web page.

6. Select a control layout from the available options.

A preview of the selected layout appears.

7. Select **Auto Start** if you want the RealMedia file to play automatically when your Web page is opened.

8. Click **Next**.

The Web Page Caption page appears.

9. Enter a caption name that will appear as a title for the RealMedia file.

10. Select whether you want the caption to appear above or below the Player controls.

11. Click **Next**.

The Web Page Filename page appears.

12. Enter the name and directory of the Web page you want to create

Note

Avoid saving files into your computer's temporary directory (such as C:\TEMP), since this directory is reserved and may be deleted.

13. Click **Next**.

The Web Page Results page opens. This page informs you that a Web page and a RealMedia metafile have been created.

14. If you wish to preview your Web page with an Internet browser, click **Preview** on the Results page.

You must have RealPlayer installed to view your page properly.

15. Click **Finish** to close the wizard.

Keep in mind that the Web pages you create with the Web Page Wizard will initially point to files located on your local hard drive. If you upload your pages to a Web server, these local file references will be automatically updated. Therefore, you should avoid making manual changes to any file references in HTML files created by the wizard.

Alterations to these files or any file references contained in the associated .ram/.rpm metafile may cause errors when publishing Web pages to a remote server.

About Metafiles

A metafile points a Web page link to one or more RealMedia clips located on a remote server. The function of a metafile is to point to the location where your media file actually resides and is required for your file to stream, rather than simply download and play. Typically, a metafile is located on a server and contains the URL where a RealMedia clip can be found.

Metafiles created by the RealProducer Web Page Wizard reside on your local hard drive and point to files on your local file system. When you publish your files to a server, these metafiles are automatically updated to include information about the server where your media files will be sent.

Publishing Your Files to a Server

Another wizard included with RealProducer is the Publish to Server Wizard. This wizard allows you to publish your RealMedia-enhanced Web page to a remote server. The server can be either a RealNetworks RealServer or a standard HTTP Web server.

The wizard leads you through a series of prompts to help you specify the type of server and the directory where you will upload your page. You can also specify the name of the Web server and the URL directory where your Web page will be located. The wizard then allows you to preview the finished page.

When you upload your Web pages to a remote server, RealProducer automatically updates your Web page and .ram/.rpm metafile to point to the appropriate server addresses, directories and files.

To avoid confusion during the publishing process, you should contact your Internet Service Provider (ISP) for the following information before you begin.

Worksheet 1: HTTP Server Information

If you are using a standard HTTP Web server to stream RealMedia, you should obtain the following information from your system administrator or ISP. For simple HTTP streaming, your Web page and media file will be copied to the same location.

File Server: Name or IP address of the file server where your Web page will be uploaded. For example: *ftp.server.com*.

Directory: Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *htmlpages*, enter HTMLPAGES as the directory name. This may be left blank.

Web Server: Name or IP address of the Web server users will use to locate your Web page. For example, if the full URL users will use is *http://www.server.com/htmlpages/file.htm*, enter WWW.SERVER.COM as the Web server name.

URL Directory: The directory on the Web server that users will use to locate your Web page. For example, if the full URL is *http://www.server.com/htmlpages/file.htm*, enter HTMLPAGES as the URL Directory.

Worksheet 2: RealServer Information

If you are using a RealServer to stream your files, you will also need to obtain the following information from your system administrator or ISP. Please note that for streaming from a RealServer your Web page will be copied to a standard HTTP Web server, while your RealMedia file may be copied to a separate RealServer.

File Server: Name or IP address of the file server where your Web page will be uploaded. For example: *ftp.server.com*.

Directory: Name of the directory on the file server where your Web page will be uploaded. For example, if the personal directory assigned to you by your system administrator is *htmlpages*, enter HTMLPAGES as the directory name. This may be left blank.

RealServer: Name or IP address of the RealServer where you will upload your RealMedia file. For example: *ftp.server.com*.

Media Directory: Name of the media directory on the RealServer where your RealMedia file will be uploaded. For example, if the media directory assigned to you by your system administrator is *myvideo*, you would enter MYVIDEO as the directory name.

RealServer Location: Name or IP address of the RealServer that users will use to locate your media file. This can include the port. For example, if the full URL users will use to locate your media file on the Internet is *rtsp://real.server.com:6060/myvideo/file.rm* you would enter REAL.SERVER.COM:6060 as the RealServer name and port.

URL Directory: The directory on the RealServer that users will use to locate your media file. For example if the full URL that users will use to locate your media file is *rtsp://real.server.com:6060/myvideo/file.rm* you would enter MYVIDEO as the URL Directory.

Publishing to a Standard Web Server

The following instructions are for publishing your RealMedia clip to a standard HTTP Web server. While these servers may be more common, they don't allow you to fully use all RealMedia features.

Before you begin the procedure, make sure you have all of the information described in "Worksheet 1: HTTP Server Information" on page 41.

- To publish a file to stream directly from a standard HTTP Web server:

1. Click the **Publish Web Page** button.

The Publishing Wizard opens.

2. Click **Next** to begin.

3. Enter the name of the file you wish to publish and click **Next**.

The Publishing Profile page opens.

4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.

The Streaming Method page opens.

5. Click **Stream media clip from a standard Web server** and click **Next**.

The FTP Server Information page opens.

6. Type in the name or IP address of the FTP server where you are uploading your files and the directory on the FTP server where your page will be sent.

Then type in your user name and password, and click **Next**.

The Web Page URL page opens.

7. Type in the name or IP address of the Web server and URL Directory that users will use to locate your page on the Internet.

8. Click **Next**.

The Upload Progress page appears.

9. Click **Next** to begin uploading your files.

Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive an error message describing the problem and potential solutions.

10. Click **View Now!** to view your published Web page.

11. Click **Finish** when you are done viewing your published Web page.

Publishing to a RealServer

The following instructions are for publishing your RealMedia clip to a RealNetworks RealServer. Using a RealServer allows you to publish Web pages that have RealMedia without losing functionality (such as SureStream).

Before you begin the procedure, make sure you have all of the information described in "Worksheet 2: RealServer Information" on page 42.

► To publish a file to stream directly from a RealNetworks RealServer:

1. Click the **Publish Web Page** button.

The Publishing Wizard opens.

2. Click **Next** to begin.

3. Enter the name of the file you wish to publish and click **Next**.

The Publishing Profile page opens.

4. Choose an Internet Service Provider from the list or select **Generic - No Defaults** if your Service Provider is not listed, and click **Next**.

The Streaming Method page opens.

5. Click **Stream media clip from a RealServer** and click **Next**.

The FTP Server Information page opens.

6. Type in the name or IP address of the FTP server where you are uploading your files and the directory on the FTP server where your page will be sent. Then type in your user name and password, and click **Next**.

The Web Page URL page opens.

7. Type in the name or IP address of the Web server and URL Directory that users will use to locate your page on the Internet, and click **Next**.

The RealServer Information page opens.

8. Enter the name or IP address of the RealServer where your media file will be sent. Enter the directory where your media file will be sent, plus your user name and password, and click **Next**.

The Media Clip URL page opens.

9. Type in the name or IP address of the RealServer where your media clip will be referenced from.

10. Select either **Use Default Ports** or **Use Custom Ports**. If you are unsure, then use the defaults.

11. Type in the directory of the RealServer where your clip will be referenced from.

The full URL of the clip that you are publishing appears below.

12. Check to see that the URL is correct, and click **Next**.

The Upload Files page opens.

13. Click **Next** to begin uploading your files.

Your files automatically upload to your Web server. If any errors occur while uploading your files, you will receive an error message describing the problem and potential solutions.

14. Click **View Now!** to view your published Web page.

15. Click **Finish** when you are done viewing your published Web page.

Sending Your Files Via E-mail

This section describes how you can send your recorded RealMedia files to other people using your default e-mail application. Your recipients must have the RealPlayer installed on their machine in order to play the file.

- To send your RealMedia file via e-mail:

1. Click the **E-Mail Clip** button.

The Select RealMedia File dialog box opens.

2. Browse for the file you want to send, select it, and click on **Open**.

A new e-mail message opens with the RealMedia file attached.

3. Specify a recipient, type in a subject, and add any other text, as you would for a regular e-mail.

4. Send the e-mail.

CUSTOMIZING RECORDING OPTIONS

Chapter 4

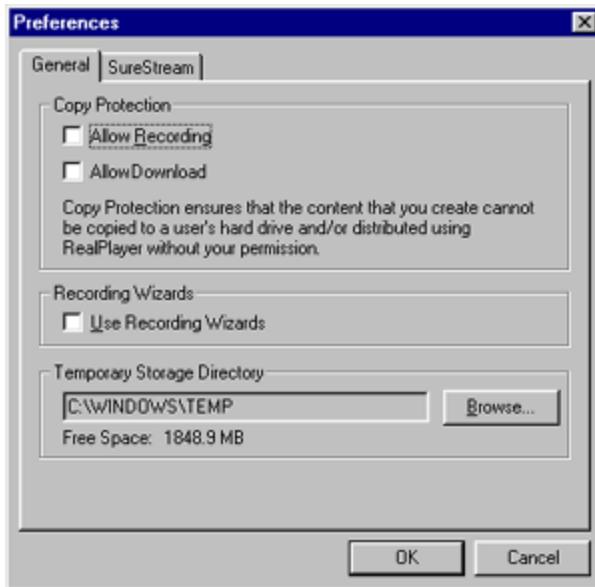
RealProducer comes with a variety of options that allow you to create RealMedia suited to your needs. This chapter discusses how to change different recording preferences, and how to change audio and video capture settings.

Changing RealProducer Preferences

RealProducer gives you the option to modify settings that affect all recording sessions. This section shows you how to change general recording preferences. You use the Preferences dialog box to make these adjustments.

The General page of the Preferences dialog box allows you to change copy protection options, the use of recording wizards, and the temporary storage directory used by RealProducer.

The Preferences Dialog Box - General Page



Copy Protection

By changing copy protection options, you are allowing RealPlayer Plus users to be able to record your RealMedia clip during playback or download your RealMedia clip to their hard drive. If you don't want users to be able to record or download your clips, make sure these options are not selected.

Selecting the **Allow Recording** preference allows RealPlayer Plus users the option of recording the playback of your RealMedia clip onto their computers. When your clip is played back on a RealPlayer Plus, the user can click the Record button and your clip is saved on the user's machine. Deselecting this preference disables the Record button for RealPlayer Plus users.

Selecting the **Allow Download** preference gives any user--even those without a RealPlayer--the ability to download your RealMedia clip directly onto their hard drive.

- To allow copying of your RealMedia clips:
 1. From the RealProducer main window, choose **Preferences** from the **Options** menu.

The Preferences dialog opens.

2. Click the **General** tab.
3. Select **Allow Recording** if you want RealPlayer Plus users to be able to record your clip.
4. Select **Allow Download** if you want users to be able to download your clip to their hard drive.
5. Click **OK** to close this dialog.

Recording Wizards

Once you become familiar with the recording process, you can disable the recording wizards and use the New Session dialog to create a new recording session. This preference allows you to easily toggle the wizards on or off.

➤ To enable or disable the recording wizards:

1. From the RealProducer main window, choose **Preferences** from the **Options** menu.
The Preferences dialog opens.
2. Click the **General** tab.
3. Select **Use Recording Wizards** if you want to use the wizards when setting up a recording session.
This is the default setting.
4. Deselect this option to turn off the wizards.
When you choose **File > New Session** from the RealProducer main window, the New Session dialog box opens.
5. Click **OK** to close this dialog.

Temporary Storage Directory

During a recording session, RealProducer uses a directory to store media files prior to creating the final RealMedia clip. Using the Preferences dialog box, you can change the directory used for this purpose.

➤ To change the temporary storage directory used by RealProducer:

1. From the RealProducer main window, choose **Preferences** from the **Options** menu.
The Preferences dialog opens.
2. Click the **General** tab.

3. Click the **Browse** button, select the new temporary storage directory, and click **OK**.
4. Click **OK** to close this dialog.

Changing Audio and Video Capture Settings

When recording from a media device, either to a file or to a live broadcast, your computer must be set up to use the necessary capture card. All audio and video capture cards have different settings; refer to your card's specific documentation for information.

Audio Capture Settings

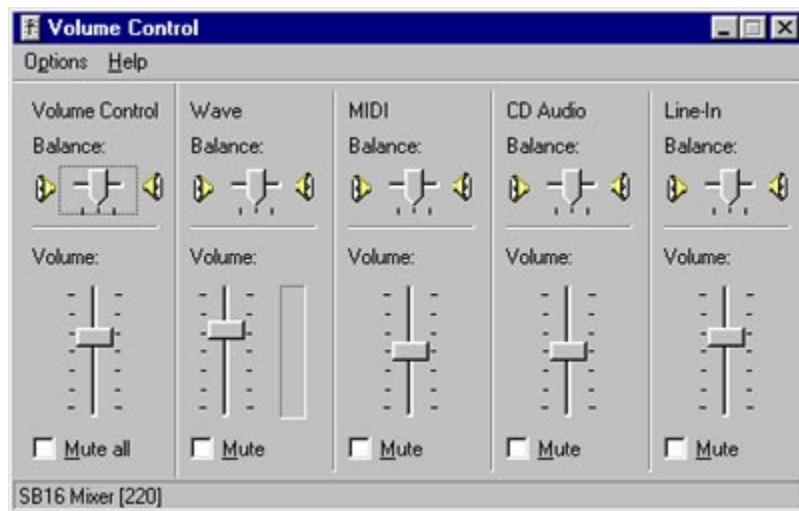
With RealProducer, you can set the recording volume of the audio capture device.

Adjusting Volume Control

While recording, you can adjust or monitor the volume using the Windows Volume Control window.

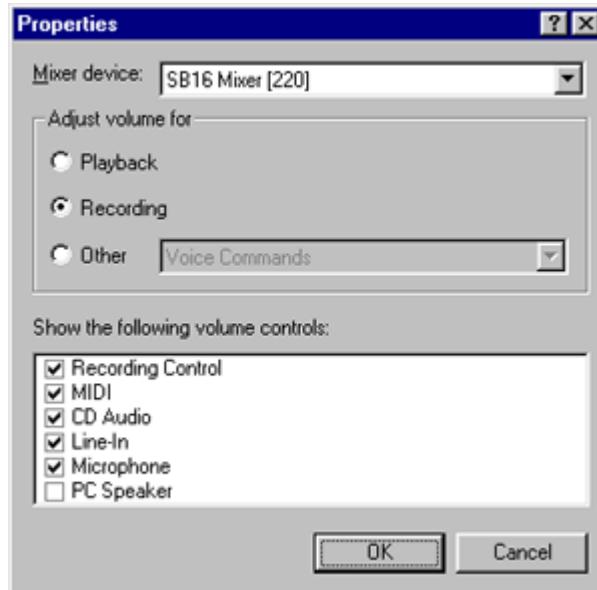
- To adjust the recording volume:
 1. Select **Volume Control** from the Options menu.

The Volume Control window opens.



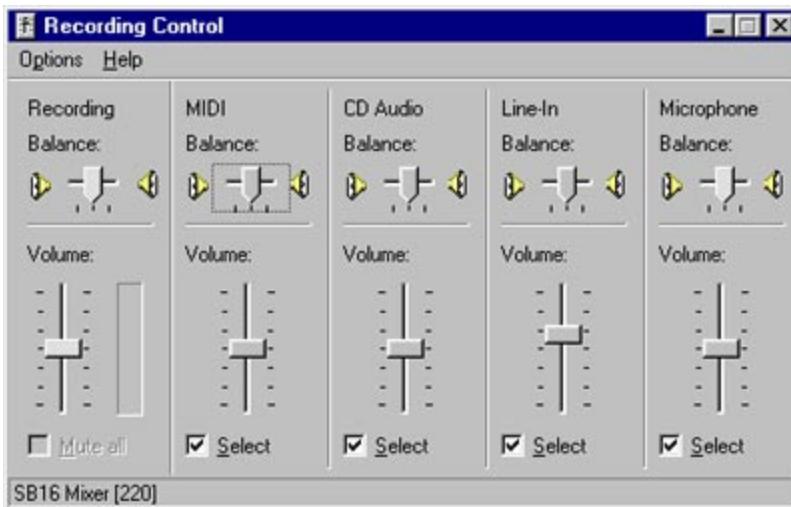
2. In the Volume Control window, select **Properties** from the Options menu.

The Properties window displays.



3. Select **Recording** to adjust the input recording volume. (The **Playback** option adjusts the level of the volume you hear while you are recording, not the volume RealProducer uses.)
4. Select from the list of volume controls the type of inputs you will be using and click **OK**.

The Recording Control window opens.



5. Select which recording inputs to use by choosing the Select box for each input.
6. Adjust the sound level by moving the sliders up or down.
Remember, if the volume is too high, the recorded sound may be clipped and appear distorted. If the volume is too low, it will be difficult to hear. Use the audio level meter in the RealProducer window to monitor the level during encoding.
7. Close the Recording Control window and return to the RealProducer.

Video Capture Settings

With RealProducer, you can set the following settings for your video capture card: video format, video source, and video compression.

Setting Your Video Card

RealProducer allows you to set how your video capture card creates video input. Every supported capture card works differently, so be sure to refer to your card's documentation.

- To change settings for your video capture card:

1. Select Video Capture Settings from the Options menu.

A drop down list gives you the following options:

- Video Format
- Video Source
- Video Compression

2. Select an option and adjust the settings according to your video capture card's documentation.

RECORDING TIPS

Chapter 5

Because there is no single best process for delivering all types of streaming audio and video, this chapter shows you various tips on how to get the most out of your RealProducer recording session.

This chapter discusses how to:

- improve RealProducer performance
- use RealProducer more effectively
- produce high-quality audio
- produce high-quality video

Improving RealProducer Performance

A number of factors can influence how much of your system's resources are used during a recording session. Use these tips to get the best performance possible.

Disabling Viewers

By disabling the input source window, the output source window, and the audio level meter during live recording, you can lower the amount of processing power needed to record. Consequently, you can increase the frame rate of your recorded file and decrease the time it takes to record your clip.

➤ To disable viewers during recording:

1. Choose the **View** menu from the main RealProducer window.

Viewers that are currently active are designated with a checkmark:

- Input Source
- Encoded Output
- Audio Meter

2. Select a viewer to disable it.

Using RealProducer Effectively

RealProducer has features that allow you to more easily use RealProducer and increase efficiency while recording your media clips.

Live Capture-to-File

If you have a real-time capture station, you can use it to capture and compress directly into RealMedia format. The output of an audio or video device can be recorded by RealProducer to a RealMedia file instead of a live broadcast.

This process eliminates the need to create and store intermediate audio or video files, which are very large and can take considerable disk space. It is also the fastest way to capture content like breaking news clips when time-to-post is important.

Drag-and-Drop Recording

RealProducer supports drag-and-drop recording. This feature allows you to quickly convert an input audio or video file into RealMedia.

- To use drag-and-drop with RealProducer:
 1. Click an input file icon and drag it onto an open RealProducer window. This opens a new session with path and file name information entered appropriately.
 2. Enter any descriptive information (title, author, and copyright) and customize recording settings before clicking **Start**.

Producing High-Quality Audio

This section describes how to successfully create quality sound for RealMedia clips. It gives you overall audio tips, describes audio sampling rates, and shows you how to use the audio level meter.

General Audio Tips

Follow these tips in order to get the best quality from your different audio sources.

- Use high-quality source files or a recording input device.
- If you are not doing a live broadcast, capture or “digitize” the sound to a supported file format such as a .wav or .au file whenever possible.

This allows you to use a sound editor to adjust the amplitude of your signal to maximize the available dynamic range. If you do not adjust the signal, the resulting RealMedia file may sound flat.

- If your original audio file signal exceeds the acceptable amplitude range, the file may be “clipped.” Clipping can give rise to clicks or pops on playback. If your source file contains a clipped signal, your final RealMedia file will have high-frequency background noise or static. Lowering the input volume will help reduce clipping.
- When encoding live-source audio, you have less opportunity to manipulate your input signal. Be sure that volume levels are prepared and tested before encoding.
- Cut any unnecessarily long silences from the beginning or end of the output file to conserve space.

Audio Sampling Rates

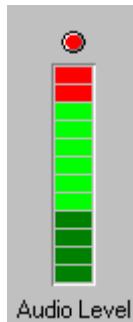
The following sampling rates for your source audio are supported for this version of the product. For fuller sound, use the higher sampling rates and a better audio codec.

- 8000 Hz
- 11025 Hz
- 16000 Hz
- 22050 Hz
- 32000 Hz
- 44100 Hz

Using the Audio Level Meter

While you record RealMedia clips, you can monitor the Audio Level to be sure you are encoding the optimal dynamic range. Green indicates a normal reading. Red warns that you are close to an over-modulated input. The best sound quality will occur when the top red bar is often lit but the clipping indicator (the red light above the meter) is never lit.

The Audio Level Meter



Clear the clipping indicator during recording by clicking on it. This allows you to track if audio clipping is occurring without watching the audio level constantly.

Producing High-Quality Video

This section describes how to successfully create quality video for RealMedia clips. Follow these tips in order to get the best quality from the different types of video sources.

Recommended Video Types

In order to get high quality output, your video source should meet the following requirements organized by video type.

AVI Files

- AVI files should have a 24-bit color depth.
- The standard video frame size for the Internet is 176 x 144.
- The file should be uncompressed for best results.
- Indeo drivers must be installed on your machine for RealProducer to be able to open AVI files created with YUV9 format. The Indeo drivers are available from the Intel Web site (<http://www.intel.com>).

However, if you captured an AVI file on the same machine as RealProducer, there is typically no problem.

QuickTime Files

- Use 24-bit RGB QuickTime video files.
- Use 8-bit or 16-bit mono and stereo audio.

Video Capture Devices

- When using an external video source, start with the best possible quality. In particular, different video formats yield different qualities when captured (digitized).

The common video formats in order of quality are:

- Betacam-SP, also known simply as Beta. This format is common among video production professionals.
- Laserdisc or DVD
- S-VHS or Super-VHS
- VHS

- Video playback devices commonly have two types of video outputs, S-video and composite. S-video produces better results.

Sizing the Image

RealProducer supports any size image from any video source, but it will automatically crop the height and width to multiples of 4. The most common video image sizes are 160 x 120, 176 x 144 pixels, or 320 x 240 pixels.

Live capture image size is controlled through **Set Video Format** under the Options menu, and is dependent upon the video capture hardware installed.

Cropping the Image

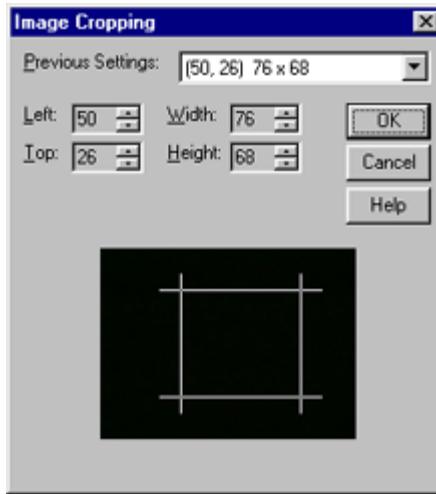
RealProducer's cropping feature allows you to record any portion of a video image that you wish. By cropping an image, you can reduce the overall bit rate of your recorded clip while removing unnecessary image space.

The smallest size that you can crop an image to is 32 x 32.

► To crop a video image:

1. To edit the image cropping settings, select **Crop Settings** from the **Options** menu.

The Image Cropping window displays a sample image from the session input. Notice the crop lines around part of the image. These lines show the portion of the image that will be recorded.



2. Use **Left**, **Top**, **Width**, and **Height** buttons to adjust the size and location of crop lines. All dimensions will automatically adjust to a multiple of 4.
3. Click **OK** to return to the RealProducer window.
4. Select **Crop Enabled** from the **Options** menu.
5. Click the **Start** button to start the recording process using the crop settings.

The cropped image appears in the Encoded Output viewer.

Chapter 6

COMMAND LINE UTILITIES

RealProducer is installed with utilities that allow you to use the command line to modify streaming media files (.rm files). You run these utilities through the MS-DOS prompt.

The following programs are available to you:

- **RMEditor** allows you to change information about an .rm file, trim the length of the clip, combine multiple .rm files, and create a text file containing the file's information.
- **RMEvents** allows you to merge image map and event text files into an existing .rm file and extract events and image maps from a .rm file into a text file.

Using RMEditor

RMEditor allows you to modify a previously created .rm file by changing clip information, recording and downloading options, and clip length.

► To use the command line editor:

1. Open the MS-DOS prompt.
2. Change the directory to the main RealProducer directory.
The default main directory is c:\Program Files\Real\Producer.
3. Type `rmeditor -i input.rm -o output.rm <switches>` where `input.rm` is the name of the input file, `output.rm` is the name of the output file, and `<switches>` are the editing switches you specify. See the table below for more details on all necessary switches.

Switches

The following table describes each switch that you can use on the command line.

RMEditor Switches

Syntax	Description	Example
-a <author>	name of the author of the clip	-a "New Name"
-t <title>	title of the clip	-t "New Title"
-c <copyright>	copyright information	-c "1999 by My Company"
-C <comments>	any comments about the clip	-C "blah blah"
-k 0 or 1	allow download	-k 1
-r 0 or 1	allow recording for RealPlayer Plus users	-r 1
-s <dd:hh:mm:ss>	start time of the edited clip in days:hours:minutes:seconds	-s 00:00:30:45.20
-e <dd:hh:mm:ss>	end time of the edited clip in days:hours:minutes:seconds; use 0 to specify the end of the input file	-e 00:02:15:00.00
-l <file>	the path and name of the log file; edit results are written to this file	-l c:\Real\Producer\logs\logfile.txt
-d <file>	the path and name of the dump file; the contents of the input file are written to this file	-l c:\Real\Producer\dumps\dumpfile.txt

Examples

The following example allows you to view the current title, author, copyright, comments, mobile playback and selective record settings:

```
rmeditor -i input.rm
```

The following example changes the title of input.rm to "New Title" and saves the file as output.rm:

```
rmeditor -i input.rm -t "New Title" -o output.rm
```

The following example disables the selective record option and saves the file as output.rm:

```
rmeditor -i input.rm -r 0 output.rm
```

The following example trims both the beginning and end of input.rm and saves the result as output.rm:

```
rmeditor -i input.rm -s 0:0:3:2.20 -e 0:0:4:2.20 -o output.rm
```

Note

The start and end times will be adjusted in video clips so that the clip starts and ends on keyframes.

The following example pastes several .rm files together into one output file:

```
rmeditor -i input1.rm -i input2.rm -i input3.rm -o output.rm
```

Note

If more than one input file is specified, any start and end time arguments will be ignored.

Using RMEvents

RMEvents allows you to merge events and image map text files to an .rm file. Events and image map text files are created using a text editor. Refer to the *RealSystem G2 Production Guide* for more information. RMEvents also allows the user to extract events and image maps from a .rm file into a text file, so they may be edited using any text editor.

- To use the command line events utility:
 1. Open the MS-DOS prompt.
 2. Change the directory to the main RealProducer directory.
The default main directory is c:\Program Files\Real\Producer.
 3. Type **rmevents -i input.rm -o output.rm <switches>** where input.rm is the name of the input file, output.rm is the name of the output file, and <switches> are the events switches you specify. See the table below for more details on all necessary switches.

Switches

The following table describes each switch that you can use on the command line.

RMEvents Switches

Syntax	Description	Example
-e <file>	path and name of the event text file	-e c:\Real\event.txt
-m <file>	path and name of the image map text file	-m c:\Real\image.txt
-d <dump>	the path and name of the dump files that hold the image maps and events dumped from the input file; events will be dumped into <dump>_evt.txt and image maps to <dump>_imap.txt	-d c:\Real\events\input

Examples

The following example merges an event text file with a .rm file:

```
rmevents -i input.rm -e events.txt -o output.rm
```

The following example merges an image map text file with a .rm file:

```
rmevents -i input.rm -m image.txt -o output.rm
```

The following example dumps image maps and events from the input file into files named input_imap.txt and input_evt.txt, respectively:

```
rmevents -i input.rm -d input
```